

SEQUENCE LISTING

<110> Azpiroz, Ricardo
Choe, Sunghwa
Feldmann, Kenneth A.

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<140> US 09/502,426

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Pro Arg Ser Ile Gly Gly Ile Leu Gly Lys Trp Ser Met Leu Val Leu
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 <213> Lycopersicon esculentum

<400> 20
 Met Ala Phe Phe Leu Ile Phe Leu Ser Ser Phe Phe Gly Leu Cys Ile
 1 5 10 15
 Phe Cys Thr Ala Leu Leu Arg Trp Asn Gln Val Lys Tyr Asn Gln Lys
 20 25 30
 Asn Leu Pro Pro Gly Thr Met Gly Trp Pro Leu Phe Gly Glu Thr Thr
 35 40 45
 Glu Phe Leu Lys Leu Gly Pro Ser Phe Met Lys Asn Gln Arg Ala Arg
 50 55 60
 Tyr Gly Ser Phe Phe Lys Ser His Ile Leu Gly Cys Pro Thr Ile Val
 65 70 75 80
 Ser Met Asp Ser Glu Leu Asn Arg Tyr Ile Leu Val Asn Glu Ala Lys
 85 90 95
 Gly Leu Val Pro Gly Tyr Pro Gln Ser Met Ile Asp Ile Leu Gly Lys
 100 105 110
 Cys Asn Ile Ala Ala Val Asn Gly Ser Ala His Lys Tyr Met Arg Gly
 115 120 125
 Ala Leu Leu Ser Leu Ile Ser Pro Thr Met Ile Arg Asp Gln Leu Leu
 130 135 140
 Pro Lys Ile Asp Glu Phe Met Arg Ser His Leu Thr Asn Trp Asp Asn
 145 150 155 160
 Lys Val Ile Asp Ile Gln Glu Lys Thr Asn Lys Met Ala Phe Leu Ser
 165 170 175
 Ser Leu Lys Gln Ile Ala Gly Ile Glu Ser Thr Ser Leu Ala Gln Glu
 180 185 190
 Phe Met Ser Glu Phe Phe Asn Leu Val Leu Gly Thr Leu Ser Leu Pro
 195 200 205
 Ile Asn Leu Pro Asn Thr Asn Tyr His Arg Gly Phe Gln Ala Arg Lys
 210 215 220
 Ile Ile Val Asn Leu Leu Arg Thr Leu Ile Glu Glu Arg Arg Ala Ser
 225 230 235 240
 Lys Glu Ile Gln His Asp Met Leu Gly Tyr Leu Met Asn Glu Glu Ala
 245 250 255
 Thr Arg Phe Lys Leu Thr Asp Asp Glu Met Ile Asp Leu Ile Ile Thr
 260 265 270
 Ile Leu Tyr Ser Gly Tyr Glu Thr Val Ser Thr Thr Ser Met Met Ala
 275 280 285
 Val Lys Tyr Leu His Asp His Pro Lys Val Leu Glu Glu Leu Arg Lys
 290 295 300
 Glu His Met Ala Ile Arg Glu Lys Lys Lys Pro Glu Asp Pro Ile Asp
 305 310 315 320
 Tyr Asn Asp Tyr Arg Ser Met Arg Phe Thr Arg Ala Val Ile Leu Glu
 325 330 335
 Thr Ser Arg Leu Ala Thr Ile Val Asn Gly Val Leu Arg Lys Thr Thr
 340 345 350
 Gln Asp Met Glu Ile Asn Gly Tyr Ile Ile Pro Lys Gly Trp Arg Ile
 355 360 365

Tyr	Val	Tyr	Thr	Arg	Glu	Leu	Asn	Tyr	Asp	Pro	Arg	Leu	Tyr	Pro	Asp
370						375					380				
Pro	Tyr	Ser	Phe	Asn	Pro	Trp	Arg	Trp	Met	Asp	Lys	Ser	Leu	Glu	His
385					390					395					400
Gln	Asn	Ser	Phe	Leu	Val	Phe	Gly	Gly	Gly	Thr	Arg	Gln	Cys	Pro	Gly
				405					410					415	
Lys	Glu	Leu	Gly	Val	Ala	Glu	Ile	Ser	Thr	Phe	Leu	His	Tyr	Phe	Val
			420					425					430		
Thr	Lys	Tyr	Arg	Trp	Glu	Glu	Ile	Gly	Gly	Asp	Lys	Leu	Met	Lys	Phe
	435						440					445			
Pro	Arg	Val	Glu	Ala	Pro	Asn	Gly	Leu	Arg	Ile	Arg	Val	Ser	Ala	His
450						455					460				

<210> 21

<211> 444

<212> PRT

<213> Synechocystis sp.

<400> 21

Met	Ile	Thr	Ser	Pro	Thr	Asn	Leu	Asn	Ser	Leu	Pro	Ile	Pro	Pro	Gly
1				5				10					15		
Asp	Phe	Gly	Leu	Pro	Trp	Leu	Gly	Glu	Thr	Leu	Asn	Phe	Leu	Asn	Asp
			20					25				30			
Gly	Asp	Phe	Gly	Lys	Lys	Arg	Gln	Gln	Gln	Phe	Gly	Pro	Ile	Phe	Lys
		35				40						45			
Thr	Arg	Leu	Phe	Gly	Lys	Asn	Val	Ile	Phe	Ile	Ser	Gly	Ala	Leu	Ala
50						55					60				
Asn	Arg	Phe	Leu	Phe	Thr	Lys	Glu	Gln	Glu	Thr	Phe	Gln	Ala	Thr	Trp
65					70					75					80
Pro	Leu	Ser	Thr	Arg	Ile	Leu	Leu	Gly	Pro	Asn	Ala	Leu	Ala	Thr	Gln
				85					90					95	
Met	Gly	Glu	Ile	His	Arg	Ser	Arg	Arg	Lys	Ile	Leu	Tyr	Gln	Ala	Phe
			100					105					110		
Leu	Pro	Arg	Thr	Leu	Asp	Ser	Tyr	Leu	Pro	Lys	Met	Asp	Gly	Ile	Val
		115					120					125			
Gln	Gly	Tyr	Leu	Glu	Gln	Trp	Gly	Lys	Ala	Asn	Glu	Val	Ile	Trp	Tyr
130						135					140				
Pro	Gln	Leu	Arg	Arg	Met	Thr	Phe	Asp	Val	Ala	Ala	Thr	Leu	Phe	Met
145					150					155					160
Gly	Glu	Lys	Val	Ser	Gln	Asn	Pro	Gln	Leu	Phe	Pro	Trp	Phe	Glu	Thr
				165					170					175	
Tyr	Ile	Gln	Gly	Leu	Phe	Ser	Leu	Pro	Ile	Pro	Leu	Pro	Asn	Thr	Leu
			180					185					190		
Phe	Gly	Lys	Ser	Gln	Arg	Ala	Arg	Ala	Leu	Leu	Leu	Ala	Glu	Leu	Glu
		195				200						205			
Lys	Ile	Ile	Lys	Ala	Arg	Gln	Gln	Gln	Pro	Pro	Ser	Glu	Glu	Asp	Ala
210						215					220				
Leu	Gly	Ile	Leu	Leu	Ala	Ala	Arg	Asp	Asp	Asn	Asn	Gln	Pro	Leu	Ser
225					230					235					240
Leu	Pro	Glu	Leu	Lys	Asp	Gln	Ile	Leu	Leu	Leu	Leu	Phe	Ala	Gly	His
				245					250					255	
Glu	Thr	Leu	Thr	Ser	Ala	Leu	Ser	Ser	Phe	Cys	Leu	Leu	Leu	Gly	Gln
			260					265						270	
His	Ser	Asp	Ile	Arg	Glu	Arg	Val	Arg	Gln	Glu	Gln	Asn	Lys	Leu	Gln
		275					280					285			
Leu	Ser	Gln	Glu	Leu	Thr	Ala	Glu	Thr	Leu	Lys	Lys	Met	Pro	Tyr	Leu
290						295					300				

```

Asp Gln Val Leu Gln Glu Val Leu Arg Leu Ile Pro Pro Val Gly Gly
305          310          315          320
Gly Phe Arg Glu Leu Ile Gln Asp Cys Gln Phe Gln Gly Phe His Phe
          325          330          335
Pro Lys Gly Trp Leu Val Ser Tyr Gln Ile Ser Gln Thr His Ala Asp
          340          345          350
Pro Asp Leu Tyr Pro Asp Pro Glu Lys Phe Asp Pro Glu Arg Phe Thr
          355          360          365
Pro Asp Gly Ser Ala Thr His Asn Pro Pro Phe Ala His Val Pro Phe
          370          375          380
Gly Gly Gly Leu Arg Glu Cys Leu Gly Lys Glu Phe Ala Arg Leu Glu
385          390          395          400
Met Lys Leu Phe Ala Thr Arg Leu Ile Gln Gln Phe Asp Trp Thr Leu
          405          410          415
Leu Pro Gly Gln Asn Leu Glu Leu Val Val Thr Pro Ser Pro Arg Pro
          420          425          430
Lys Asp Asn Leu Arg Val Lys Leu His Ser Leu Met
          435          440

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<210> 22
<211> 519
<212> PRT
<213> Zea mays

```

```

<400> 22
Met Leu Gly Val Gly Met Ala Ala Ala Val Leu Leu Gly Ala Val Ala
1          5          10          15
Leu Leu Leu Ala Asp Ala Ala Ala Arg Arg Ala His Trp Trp Tyr Arg
          20          25          30
Glu Ala Ala Glu Ala Val Leu Val Gly Ala Val Ala Leu Val Val Val
          35          40          45
Asp Ala Ala Ala Arg Arg Ala His Gly Trp Tyr Arg Glu Ala Ala Leu
50          55          60
Gly Ala Ala Arg Arg Ala Arg Leu Pro Pro Gly Glu Met Gly Trp Pro
65          70          75          80
Leu Val Gly Gly Met Trp Ala Phe Leu Arg Ala Phe Lys Ser Gly Lys
          85          90          95
Pro Asp Ala Phe Ile Ala Ser Phe Val Arg Arg Phe Gly Arg Thr Gly
          100          105          110
Val Tyr Arg Ser Phe Met Phe Ser Ser Pro Thr Val Leu Val Thr Thr
          115          120          125
Ala Glu Gly Cys Lys Gln Val Leu Met Asp Asp Asp Ala Phe Val Thr
130          135          140
Gly Trp Pro Lys Ala Thr Val Ala Leu Val Gly Pro Arg Ser Phe Val
145          150          155          160
Ala Met Pro Tyr Asp Glu His Arg Arg Ile Arg Lys Leu Thr Ala Ala
          165          170          175
Pro Ile Asn Gly Phe Asp Ala Leu Thr Gly Tyr Leu Pro Phe Ile Asp
          180          185          190
Arg Thr Val Thr Ser Ser Leu Arg Ala Trp Ala Asp His Gly Gly Ser
          195          200          205
Val Glu Phe Leu Thr Glu Leu Arg Arg Met Thr Phe Lys Ile Ile Val
210          215          220
Gln Ile Phe Leu Gly Gly Ala Asp Gln Ala Thr Thr Arg Ala Leu Glu
225          230          235          240
Arg Ser Tyr Thr Glu Leu Asn Tyr Gly Met Arg Ala Met Ala Ile Asn
          245          250          255

```

Leu Pro Gly Phe Ala Tyr Arg Gly Ala Leu Arg Ala Arg Arg Arg Leu
 260 265 270
 Val Ala Val Leu Gln Gly Val Leu Asp Glu Arg Arg Ala Ala Arg Ala
 275 280 285
 Lys Gly Val Ser Gly Gly Gly Val Asp Met Met Asp Arg Leu Ile Glu
 290 295 300
 Ala Gln Asp Glu Arg Gly Arg His Leu Asp Asp Asp Glu Ile Ile Asp
 305 310 315 320
 Val Leu Val Met Tyr Leu Asn Ala Gly His Glu Ser Ser Gly His Ile
 325 330 335
 Thr Met Trp Ala Thr Val Phe Leu Gln Glu Asn Pro Asp Met Phe Ala
 340 345 350
 Arg Ala Lys Ala Glu Gln Glu Ala Ile Met Arg Ser Ile Pro Ser Ser
 355 360 365
 Gln Arg Gly Leu Thr Leu Arg Asp Phe Arg Lys Met Glu Tyr Leu Ser
 370 375 380
 Gln Val Ile Asp Glu Thr Leu Arg Leu Val Asn Ile Ser Phe Val Ser
 385 390 395 400
 Phe Arg Gln Ala Thr Arg Asp Val Phe Val Asn Gly Tyr Leu Ile Pro
 405 410 415
 Lys Gly Trp Lys Val Gln Leu Trp Tyr Arg Ser Val His Met Asp Pro
 420 425 430
 Gln Val Tyr Pro Asp Pro Thr Lys Phe Asp Pro Ser Arg Trp Glu Gly
 435 440 445
 His Ser Pro Arg Ala Gly Thr Phe Leu Ala Phe Gly Leu Gly Ala Arg
 450 455 460
 Leu Cys Pro Gly Asn Asp Leu Ala Lys Leu Glu Ile Ser Val Phe Leu
 465 470 475 480
 His His Phe Leu Leu Gly Tyr Lys Leu Ala Arg Thr Asn Pro Arg Cys
 485 490 495
 Arg Val Arg Tyr Leu Pro His Pro Arg Pro Val Asp Asn Cys Leu Ala
 500 505 510
 Lys Ile Thr Arg Val Gly Ser
 515

<210> 23

<211> 492

<212> PRT

<213> Danio rerio

<400> 23

Met Gly Leu Tyr Thr Leu Met Val Thr Phe Leu Cys Thr Ile Val Leu
 1 5 10 15
 Pro Val Leu Leu Phe Leu Ala Ala Val Lys Leu Trp Glu Met Leu Met
 20 25 30
 Ile Arg Arg Val Asp Pro Asn Cys Arg Ser Pro Leu Pro Pro Gly Thr
 35 40 45
 Met Gly Leu Pro Phe Ile Gly Glu Thr Leu Gln Leu Ile Leu Gln Arg
 50 55 60
 Arg Lys Phe Leu Arg Met Lys Arg Gln Lys Tyr Gly Cys Ile Tyr Lys
 65 70 75 80
 Thr His Leu Phe Gly Asn Pro Thr Val Arg Val Met Gly Ala Asp Asn
 85 90 95
 Val Arg Gln Ile Leu Leu Gly Glu His Lys Leu Val Ser Val Gln Trp
 100 105 110
 Pro Ala Ser Val Arg Thr Ile Leu Gly Ser Asp Thr Leu Ser Asn Val
 115 120 125

His Gly Val Gln His Lys Asn Lys Lys Lys Ala Ile Met Arg Ala Phe
 130 135 140
 Ser Arg Asp Ala Leu Glu His Tyr Ile Pro Val Ile Gln Gln Glu Val
 145 150 155 160
 Lys Ser Ala Ile Gln Glu Trp Leu Gln Lys Asp Ser Cys Val Leu Val
 165 170 175
 Tyr Pro Glu Met Lys Lys Leu Met Phe Arg Ile Ala Met Arg Ile Leu
 180 185 190
 Leu Gly Phe Glu Pro Glu Gln Ile Lys Thr Asp Glu Gln Glu Leu Val
 195 200 205
 Glu Ala Phe Glu Glu Met Ile Lys Asn Leu Phe Ser Leu Pro Ile Asp
 210 215 220
 Val Pro Phe Ser Gly Leu Tyr Arg Gly Leu Arg Ala Arg Asn Phe Ile
 225 230 235 240
 His Ser Lys Ile Glu Asn Ile Arg Lys Lys Ile Gln Asp Asp Asp
 245 250 255
 Asn Glu Asn Glu Gln Lys Tyr Lys Asp Ala Leu Gln Leu Leu Ile Glu
 260 265 270
 Asn Ser Arg Arg Ser Asp Glu Pro Phe Ser Leu Gln Ala Met Lys Glu
 275 280 285
 Ala Ala Thr Glu Leu Leu Phe Gly Gly His Glu Thr Thr Ala Ser Thr
 290 295 300
 Ala Thr Ser Leu Val Met Phe Leu Gly Leu Asn Thr Glu Val Val Gln
 305 310 315 320
 Lys Val Arg Glu Glu Val Gln Glu Lys Val Glu Met Gly Met Tyr Thr
 325 330 335
 Pro Gly Lys Gly Leu Ser Met Glu Leu Leu Asp Gln Leu Lys Tyr Thr
 340 345 350
 Gly Cys Val Ile Lys Glu Thr Leu Arg Ile Asn Pro Pro Val Pro Gly
 355 360 365
 Gly Phe Arg Val Ala Leu Lys Thr Phe Glu Leu Asn Gly Tyr Gln Ile
 370 375 380
 Pro Lys Gly Trp Asn Val Ile Tyr Ser Ile Cys Asp Thr His Asp Val
 385 390 395 400
 Ala Asp Val Phe Pro Asn Lys Glu Glu Phe Gln Pro Glu Arg Phe Met
 405 410 415
 Ser Lys Gly Leu Glu Asp Gly Ser Arg Phe Asn Tyr Ile Pro Phe Gly
 420 425 430
 Gly Gly Ser Arg Met Cys Val Gly Lys Glu Phe Ala Lys Val Leu Leu
 435 440 445
 Lys Ile Phe Leu Val Glu Leu Thr Gln His Cys Asn Trp Ile Leu Ser
 450 455 460
 Asn Gly Pro Pro Thr Met Lys Thr Gly Pro Thr Ile Tyr Pro Val Asp
 465 470 475 480
 Asn Leu Pro Thr Lys Phe Thr Ser Tyr Val Arg Asn
 485 490

<210> 24
 <211> 504
 <212> PRT
 <213> Homo sapiens

<400> 24
 Met Ala Leu Ile Pro Asp Leu Ala Met Glu Thr Trp Leu Leu Leu Ala
 1 5 10 15
 Val Ser Leu Val Leu Leu Tyr Leu Tyr Gly Thr His Ser His Gly Leu
 20 25 30

Phe	Lys	Lys	Leu	Gly	Ile	Pro	Gly	Pro	Thr	Pro	Leu	Pro	Phe	Leu	Gly
		35					40					45			
Asn	Ile	Leu	Ser	Tyr	His	Lys	Gly	Phe	Cys	Met	Phe	Asp	Met	Glu	Cys
	50					55					60				
His	Lys	Lys	Tyr	Gly	Lys	Val	Trp	Gly	Phe	Tyr	Asp	Gly	Gln	Gln	Pro
65					70					75					80
Val	Leu	Ala	Ile	Thr	Asp	Pro	Asp	Met	Ile	Lys	Leu	Val	Leu	Val	Lys
				85					90					95	
Glu	Cys	Tyr	Ser	Val	Phe	Thr	Asn	Arg	Glu	Pro	Phe	Gly	Pro	Val	Gly
			100					105					110		
Phe	Met	Lys	Ser	Ala	Ile	Ser	Ile	Ala	Glu	Asp	Glu	Glu	Trp	Lys	Arg
		115					120					125			
Leu	Arg	Ser	Leu	Leu	Ser	Pro	Thr	Phe	Thr	Ser	Gly	Lys	Leu	Lys	Glu
	130					135					140				
Met	Val	Pro	Ile	Ile	Ala	Gln	Tyr	Gly	Asp	Val	Leu	Val	Arg	Asn	Leu
145					150					155					160
Arg	Arg	Glu	Arg	Glu	Thr	Gly	Lys	Pro	Val	Thr	Leu	Lys	Asp	Val	Phe
				165					170					175	
Gly	Ala	Tyr	Ser	Met	Asp	Val	Ile	Thr	Ser	Ser	Ser	Phe	Gly	Val	Asn
			180					185					190		
Val	Asp	Ser	Leu	Asn	Asn	Pro	Gln	Asp	Pro	Leu	Val	Glu	Asn	Thr	Lys
		195					200					205			
Lys	Leu	Leu	Arg	Phe	Asp	Phe	Leu	Asp	Pro	Phe	Phe	Leu	Ser	Ile	Thr
	210					215					220				
Val	Phe	Pro	Phe	Leu	Ile	Pro	Ile	Leu	Glu	Val	Leu	Asn	Ile	Cys	Val
225					230					235					240
Phe	Pro	Arg	Glu	Val	Thr	Asn	Phe	Leu	Arg	Lys	Ala	Val	Lys	Arg	Met
				245					250					255	
Lys	Glu	Ser	Arg	Leu	Glu	Asp	Thr	Gln	Lys	His	Arg	Val	Asp	Phe	Leu
			260					265					270		
Gln	Leu	Met	Ile	Asp	Ser	His	Lys	Asn	Ser	Lys	Glu	Thr	Glu	Ser	His
		275					280					285			
Lys	Ala	Leu	Ser	Asp	Leu	Glu	Leu	Val	Ala	Gln	Ser	Ile	Ile	Phe	Ile
	290					295					300				
Phe	Ala	Gly	Tyr	Glu	Thr	Ser	Ser	Val	Leu	Ser	Phe	Ile	Met	Tyr	
305					310				315					320	
Glu	Leu	Ala	Thr	His	Pro	Asp	Val	Gln	Gln	Lys	Leu	Gln	Glu	Glu	Ile
				325					330					335	
Asp	Ala	Val	Leu	Pro	Asn	Lys	Ala	Pro	Pro	Thr	Tyr	Asp	Thr	Val	Leu
			340					345					350		
Gln	Met	Glu	Tyr	Leu	Asp	Met	Val	Val	Asn	Glu	Thr	Leu	Arg	Leu	Phe
		355					360					365			
Pro	Ile	Ala	Met	Arg	Leu	Glu	Arg	Val	Cys	Lys	Lys	Asp	Val	Glu	Ile
	370					375					380				
Asn	Gly	Met	Phe	Ile	Pro	Lys									

Arg Asp Gly Thr Val Ser Gly Ala

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<210> 25
<211> 575
<212> PRT
<213> Artificial Sequence
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<220>
<223> Consensus sequence

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<221> VARIANT
<222> (1) ... (575)
<223> Xaa = Any Amino Acid or No Amino Acid
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<400> 25

Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa
1				5				10						15	
Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa
			20					25					30		
Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Leu	Leu	Ser	Xaa	Xaa	Ala	Leu	Xaa	Val	Xaa
		35					40					45			
Leu	Xaa	Leu	Ala	Ala	Arg	Arg	Xaa	Xaa	Xaa	Arg	Tyr	Xaa	Xaa	Xaa	Xaa
	50					55					60				
Xaa	Xaa	Xaa	Xaa	Arg	Arg	Lys	Xaa	Leu	Pro	Pro	Gly	Thr	Met	Gly	Leu
65					70					75					80
Pro	Xaa	Leu	Gly	Glu	Thr	Leu	Gln	Phe	Leu	Lys	Xaa	Xaa	Xaa	Xaa	Xaa
				85				90						95	
Xaa	Pro	Gly	Asp	Phe	Xaa	Lys	Glu	Arg	Val	Xaa	Xaa	Tyr	Gly	Xaa	Xaa
			100					105					110		
Xaa	Xaa	Ile	Tyr	Lys	His	Leu	Phe	Gly	Glu	Pro	Thr	Ile	Xaa	Ser	Xaa
		115					120					125			
Asp	Ala	Glu	Leu	Asn	Arg	Phe	Xaa	Leu	Xaa	Asn	Glu	Gly	Xaa	Lys	Leu
	130					135					140				
Phe	Xaa	Cys	Xaa	Xaa	Pro	Ala	Ser	Xaa	Xaa	Gly	Xaa	Leu	Gly	Lys	Xaa
145					150					155					160
Ser	Leu	Xaa	Ala	Xaa	Xaa	Gly	Xaa	Glu	His	Lys	Arg	Met	Arg	Xaa	Leu
				165					170					175	
Leu	Xaa	Ser	Xaa	Phe	Ser	Xaa	Xaa	Xaa	Xaa	Leu	Asp	His	Xaa	Leu	Pro
			180					185					190		
Xaa	Ile	Asp	Arg	Xaa	Val	Arg	Ser	Xaa	Leu	Xaa	Xaa	Trp	Xaa	Xaa	Xaa
		195					200					205			
Xaa	Gln	Lys	Xaa	Xaa	Ile	Val	Xaa	Xaa	Xaa	Xaa	Glu	Xaa	Lys	Lys	Met
	210					215					220				
Thr	Phe	Asp	Xaa	Xaa	Xaa	Lys	Xaa	Xaa	Met	Gly	Xaa	Xaa	Pro	Xaa	Xaa
225					230					235					240
Glu	Xaa	Thr	Xaa	Xaa	Xaa	Xaa	Leu	Val	Xaa	Glu	Xaa	Glu	Xaa	Leu	Ile
				245					250					255	
Lys	Gly	Leu	Phe	Ser	Leu	Pro	Ile	Asn	Leu	Pro	Xaa	Thr	Ala	Tyr	Xaa
			260					265					270		
Lys	Ala	Leu	Xaa	Ala	Arg	Ala	Phe	Xaa	Xaa	Ala	Xaa	Leu	Glu	Xaa	Xaa
		275					280					285			
Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Ile	Xaa	Glu	Xaa	Arg	Xaa	Glu	Glu
	290					295				300					
Glu	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa
305					310					315					320

```

Xaa Xaa Xaa Xaa Xaa Xaa Asp Asp Leu Leu Gly Leu Leu Xaa Ala Xaa
      325                      330                      335
Xaa Xaa Xaa Xaa Xaa Glu Asp Glu Xaa Xaa Xaa Xaa Leu Ser Asp Xaa
      340                      345                      350
Glu Ile Xaa Asp Xaa Ile Xaa Xaa Leu Leu Phe Ala Gly His Glu Thr
      355                      360                      365
Thr Ser Ser Xaa Leu Xaa Xaa Ala Val Lys Phe Leu Xaa Glu His Pro
      370                      375                      380
Asp Val Xaa Glu Xaa Leu Arg Glu Glu His Xaa Ala Ile Xaa Arg Ala
385                      390                      395                      400
Lys Lys Xaa Xaa Xaa Glu Ser Xaa Leu Thr Xaa Xaa Asp Tyr Lys Lys
      405                      410                      415
Met Xaa Tyr Thr Xaa Cys Val Ile Asn Glu Thr Leu Arg Leu Ala Xaa
      420                      425                      430
Ile Val Gly Gly Xaa Phe Arg Xaa Ala Xaa Lys Asp Val Glu Ile Asn
      435                      440                      445
Gly Tyr Xaa Ile Pro Lys Gly Trp Lys Val Xaa Tyr Ser Ile Arg Ala
      450                      455                      460
Val His Leu Asp Pro Asp Xaa Tyr Pro Asp Pro Glu Lys Phe Asn Pro
465                      470                      475                      480
Xaa Arg Trp Xaa Xaa Lys Xaa Xaa Xaa Xaa Ser Asn Ser Xaa Xaa Xaa
      485                      490                      495
Xaa Xaa Xaa Xaa Xaa Xaa Xaa Asn Xaa Xaa Pro Phe Gly Gly Gly Pro
      500                      505                      510
Arg Leu Cys Pro Gly Lys Glu Leu Ala Lys Leu Glu Met Xaa Val Phe
      515                      520                      525
Leu His Arg Leu Val Gln Xaa Phe Trp Glu Leu Ala Xaa Xaa Xaa Asp
      530                      535                      540
Xaa Xaa Xaa Lys Leu Val Xaa Phe Pro Thr Xaa Arg Pro Xaa Asp Asn
545                      550                      555                      560
Leu Pro Ile Lys Val Xaa Xaa Arg Asp Xaa Xaa Xaa Xaa Xaa Xaa
      565                      570                      575

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<210> 26

<211> 11

<212> PRT

<213> Artificial Sequence

<220>

<223> Heme binding domain

<221> VARIANT

<222> 4

<223> Xaa = Ala, Ser, or Val

<221> VARIANT

<222> 8

<223> Xaa = Any Amino Acid

<221> VARIANT

<222> 10

<223> Xaa = Pro, Ala, or Val

<400> 26

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Pro Phe Gly Xaa Gly Arg Arg Xaa Cys Xaa Gly
1           5           10

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<210> 27
 <211> 14
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Heme binding domain

<400> 27
 Pro Phe Gly Gly Phe Pro Arg Leu Cys Pro Gly Lys Glu Leu
 1 5 10

<210> 28
 <211> 17
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Signature sequence

<221> VARIANT
 <222> 1,13,15,16
 <223> Xaa = Any Amino Acid

<400> 28
 Xaa Leu Leu Phe Ala Gly His Glu Thr Thr Ser Ser Xaa Ile Xaa Xaa
 1 5 10 15
 Ala

<210> 29
 <211> 11
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Exemplary sequence

<400> 29
 Pro Phe Gly Gly Gly Pro Arg Leu Cys Ala Gly
 1 5 10

<210> 30
 <211> 6
 <212> PRT
 <213> Arabidopsis thaliana

<400> 30
 Ala Gly His Glu Thr Ser
 1 5